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ANNUAL MEDIC VARIETY TEST AT OVERTON 2004-2005

G. W. Evers, M. J. Parsons, and W. R. Ocumpaugh

Background. The annual medics are a group of species belonging to the *Medicago* genus that are native to the Mediterranean region. They are annual relatives of alfalfa (*Medicago*). Most species are best adapted to soils with a pH of 7 and higher and persist in lower rainfall areas than most clover species if rainfall occurs in late autumn and winter. Annual medics are more active winter growers than annual clovers but most annual medic species also lack cold tolerance which limits their northern adaptation. They produce small yellow flowers that mature into pods. Some of the species found in the United States form spines of various lengths and some do not. Individual plants may produce over a thousand seed pods.

Annual medics are dependable reseeder because they produce a high level of hard seed and have excellent seedling vigor. This excellent seedling vigor makes them one of the easiest winter annual legumes to establish. Annual medics can be established with a light disking, broadcasting the seed, and then dragging the pasture to cover the seed. Hard seed can remain viable in the soil for several years. Annual medics do have a high bloat potential. However, this can be overcome by proper management of livestock and providing other forage to the grazing animals such as frosted mature grass, hay, or planting ryegrass with the medic. Most commercial varieties in the world have been developed in Australia, and as a general rule, most Australian varieties lack winter hardiness needed to persist in Texas.

Burr medic, or burr clover, (*M. polymorpha*) was introduced sometime in the nineteenth century and has become naturalized in South Texas and the West Coast. 'Armadillo' burr medic, was selected from a naturalized ecotype in South Texas, and was released by the Texas Agricultural Experiment Station at Beeville in 1998. Armadillo is adapted south of I-20 in Central and South Texas. Barrel medic (*M. truncatula*) is less winter hardy than Armadillo burr medic, but some Australian varieties perform well in South Texas. The barrel medics are somewhat better adapted to the high pH sandy soils of Central and South Texas than Armadillo burr medic.

Spotted burr medic (*M. arabica*) is more cold tolerant, better adapted to sandy soils that are slightly acid than most other medics. This species probably has the most potential for East Texas. Black medic (*M. lupulina*) is common from South Texas north to Canada. It is the predominant annual medic on much of the blackland soils of Texas. The only commercial varieties currently available are not well adapted to Texas as they were developed for more northern regions. Button medic (*M. orbicularis*) is best adapted to the north central Texas. 'Estes' button medic is currently being marketed for North Central Texas. A problem that is unique to this species is that the pod is very large and fleshy, and it is highly palatable to deer. Nearly complete removal of all pods has been observed when using this legume in deer

food plots. Little burr medic (*M. minima*) has become naturalized in the Texas Hill Country and has smaller leaves and smaller seed than most medics. The pods have long spines and the plant is very pubescent. Devine little burr medic was released in 2005 by Texas Agricultural Experiment Station at Beeville. Devine is best adapted in the I-35 corridor from south of San Antonio to nearly the Oklahoma boarder. An annual medic variety trial was planted at Overton in the fall of 2004 to determine their adaptability to East Texas climatic conditions and soils.

Research findings. The 2004-2005 winter temperature at Overton was mild with excellent moisture conditions from October through March. These conditions resulted in good yields for all annual medic species. The spotted burr medics had the best combination of good forage distribution during the growing season and total yield (Table 1). Total yields of Beblk black medic and Ueckert burr medic were also good. Both Beblk black medic and Ueckert burr medic are still and in the experimental stage so commercial seed is not available. A good evaluation of cold tolerance was not possible because of the mild winter.

Application. Spotted burr clover appears to have the best potential for East Texas. There are no commercial varieties available at this time.

Table 1. Annual medic yields at Overton 2004-2005.

Entry	Yield			
	March 4	March 23	April 15	Total
-----dry matter (lb/acre)-----				
Armadillo burr medic	1084 ab†	619 bc	1969 b	3672 bc
Beblk black medic	781 b	509 c	2647 ab	3937 abc
Ueckert burr medic	590 b	749 bc	3203 a	4542 ab
Devine little burr medic	0 c	1295 a	2000 b	3295 c
Spotted 2 burr medic	959 ab	844 abc	2497 b	4301 ab
Spotted 4 burr medic	1494 a	1020 ab	2193 b	4706 a

†Values in a column followed by the same letter are not significantly different at the 0.05 level, Fisher's Protected LSD.